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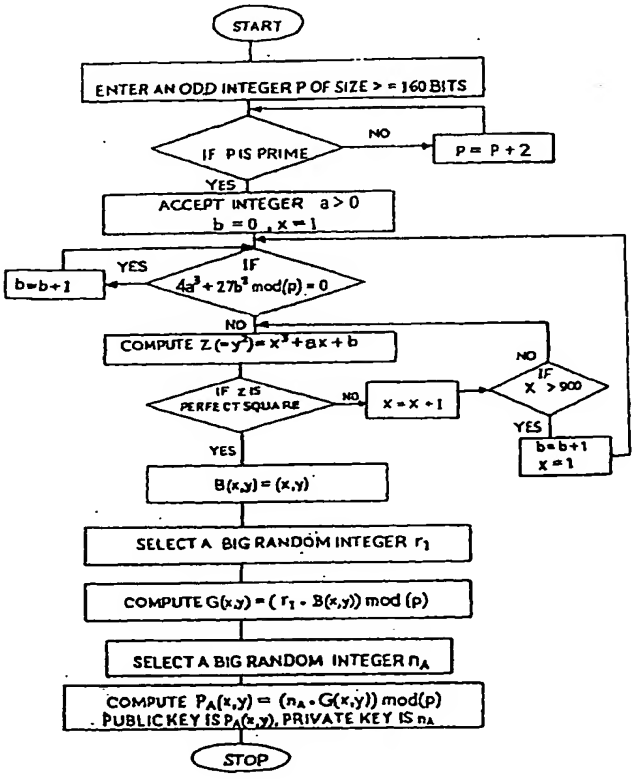
(54) Title: A METHOD OF ELLIPTIC CURVE ENCRYPTION



(57) Abstract: A method of elliptic curve encryption comprising the step of, (a) selecting an elliptic curve E_p (a,b) of the form $y^2=x^3 + ax + b$ mod (p) wherein a and b are non-negative integers less than p satisfying the formula $4a^3 + 27b^2$ mod (p) not equal to 0; (b) generating a large 160 bit random number by a method of concatenation of a number of smaller random numbers; (c) generating a well hidden point G(x,y) on the elliptic curve E_p (a,b) by scalar multiplication of a point B (x,y) on the elliptic curve with a large random integer which further comprises the steps; (i) converting the large random Integer Into a series of powers of 2^{31}; (ii) converting each coefficient of 2^{31} obtained from above step into a binary series; (iii) multiplication of binary series obtained from steps(i) & (ii) above with the point B (x,y) on the elliptic curve ; (d) generating a private key n_A(of about>=160 bit length); (e) generating of public key $P_A(x,y)$ given by the formula $P_A(x,y) = (n_A\text{-}G(x,y))$ mod (p); (f) encrypting the input message MSG; (g) decrypting the ciphered text.

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